

REMARKS

**Information Disclosure Statement**

The Examiner discusses the list of documents incorporated on pages 18-19 of the specification. The Examiner should note that a suitable IDS referring to these documents has been submitted under separate cover.

However, it should be noted that the Office has been in possession of, and had access to, these documents since on or about February 13, 2001, when the provisional application 60/268,468 was filed which incorporated those documents by reference (with copies supplied to the Office at that time). Further, because this application claims priority from the 60/268,468 application, the MPEP is believed to place a duty on the Examiner to examine all materials in the file history of the 60/268,468 application when examining this application. Nevertheless, these documents are being cited in the IDS so that they may be properly noted on the cover of the patent when it issues.

**Specification Amendment**

The last paragraph on page 6 of the specification has been amended to correct an obvious typographical error. No new matter is added by this amendment.

**Claim Rejections**

The Examiner has rejected claims 1-20 under §103 as being obvious over Aarnio in view of Haeggstrom. Applicant respectfully requests reconsideration.

### Claims 1-4

Independent claim 1 requires the steps of 1) "transmitting said location service message from said location server to a base station subsystem"; 2) "forwarding said location service message from said base station subsystem to a serving GPRS support node"; and 3) "forwarding said location service message from said serving GPRS support node to said mobile station." Thus, claim 1 explicitly requires that the location service message go from the location server to the base station subsystem, from the base station subsystem to the serving GPRS support node, and then from the serving GPRS support node to the mobile station.

With regards to the meaning of the term "location server," the Examiner's attention is directed to page 6 of the present application, which reads in relevant part "The SMLC 38 manages the overall coordination and scheduling of resources required to perform positioning of a mobile station 80 and is therefore sometimes referred to as the location server," (page 6, lines 3-6). The Examiner's attention is also directed to the passage in the present application reading:

*location service messages flow between the mobile station 80 and the SMLC 38.* These location service messages may aid the mobile station 80 in determining its position, aid the mobile terminal in taking position related measurements, and/or aid the SMLC 38 in estimating the position of the mobile station 80, depending on the location measurement approach taken. For instance, the location service messages may comprise so-called assistance data, such as GPS almanac data, GPS ephemeris data, or the like, provided by the SMLC 38 to the mobile station 80. Alternatively, the location service messages may be timed signal measurements, or the like, provided by the mobile station 80 to the SMLC 38.

(present application, page 7, line 18 to page 8, line 3 (emphasis added)). Finally, the Examiner's attention is also directed to the present application that plainly distinguishes

between an HLR and a location server, see Fig. 1 and the last paragraph of page 4 which both clearly point out that the network 30 includes both an HLR 36 and a separate SMLC 38.

The Examiner points to the teachings of Haeggstrom in an attempt to show the teachings that the Examiner admits are missing from Aarino. In particular, the Examiner points to the combined MSC/VLR of Haeggstrom and describes this as "a location server (e.g., HLR, VLR)." However, one of ordinary skill in the art would not consider an HLR and/or VLR to be a "location server," particularly in a packet data network. An HLR/VLR may keep track of routing information in order to route calls to the mobile terminal, but an HLR/VLR does not actively participate in determining the position of a mobile terminal (such as by performing the position calculations and/or providing reference information to perform the calculations) in conjunction with the mobile terminal, as is required of a "location server." Consistent with this viewpoint, the Examiner's attention is directed to Figure 1 of the present application which clearly shows that the HLR 36 is distinct from the claimed location server (SMLC 38 in Figure 1). Thus, Applicant submits that Haeggstrom shows nothing about a "location server," as that term is used in claims 1-4.

However, even assuming *arguendo* that Haeggstrom's HLR/VLR is somehow construed to be a "location server," Haeggstrom's HLR/VLR simply does not transmit any "location service messages" for the mobile station, as is required of the "location server" of claim 1. Applicant is unaware of any HLR/VLR that requests a mobile terminal to feedback its current location, or any HLR/VLR that requests a mobile terminal to take measurements that are used to determine its current location. Indeed,

Applicant is unaware of any position determining related inquiry that comes from, or is transmitted by, any HLR/VLR that flow to a mobile terminal. The Examiner is challenged to point to any teaching in Aarino or Haeggstrom to the contrary. Thus, even if the Haeggstrom HLR/VLR is somehow deemed a "location server," grafting the Haeggstrom HLR/VLR into the Aarino system would merely result in a location server that never transmits any location service messages that flow to the mobile terminal, as is explicitly required by independent claim 1. Thus, even assuming *arguendo* that Haeggstrom's HLR/VLR is somehow deemed to be a "location server" as that term is used in the present application (and understood by one of ordinary skill in the art), modifying Aarino to include Haeggstrom's HLR/VLR simply could not result in system that would carry out the method claimed in claim 1.

More importantly, modifying Aarino in view of Haeggstrom simply does not result in a system that implements the method claimed in claim 1 for another reason. Applicant notes that the Examiner asserts that it would have been obvious to modify Aarino according to Haeggstrom "in order to provide improved connection of calls between a telephone in a data network and a mobile station without using any public switched telephone network, thus achieving improved speech quality." Applicant further notes that this is the only reason put forth by the Examiner for the combination. Assuming *arguendo* that the stated rationale it itself proper, applying that rationale to the combination does not result in the claimed subject matter. The entire thrust of Haeggstrom is to eliminate tandem coding (double speech coding, see col. 2, lines 19-28). See col. 3, lines 59-60 ("Thus, from the viewpoint of speech coding, the operation is tandem free.") The way Haeggstrom achieves this is by having a "general-purpose

computer provided with telephone characteristics" (TE) connect to the mobile terminal (MS) via the Internet, instead of through the PSTN. By treating the speech data from the TE as data, and transferring the same as data through the GPRS network, no tandem coding is encountered, resulting in the "improved speech quality." Stated another way, Haeggstrom teaches that it is desirable to have a "telephone" TE connect to the mobile station via the Internet and a GPRS network without going through the PSTN so as to achieve "improved speech quality." The particular internal arrangement of the GPRS network is irrelevant to achieving this goal. Indeed, nowhere does Haeggstrom state or suggest that the GPRS network must be configured in a certain way or connect to the mobile station in a certain way. Instead, the only relevant teaching of Haeggstrom is that speech data can be communicated to a mobile terminal as mere data in a GPRS network by hooking the "telephone" TE to the GPRS network via the Internet.

Assuming *arguendo* that there is some reason to combine this teaching of Haeggstrom into Aarino, attention is directed to Figure 1 of Aarino which shows the Internet already connected to the GPRS network without going through the PSTN. If the Internet is already connected to the Aarino GPRS network, then implementing the teachings of Haeggstrom to the existing Aarino structure merely requires connecting a "telephone" TE to the Internet. With that done, the Haeggstrom goal of "improved speech quality" by avoiding the PSTN is fully achieved. Such a combination in no way requires that Aarino's standard GPRS network be completely restructured to somehow require that a BSC be inserted into the connection between a MSC and a SGSN.

Simply stated, such a restructuring of normal GPRS network structure is not required to achieve the goals of Haeggstrom.

Applicant does note that Figures 2-3 of Haeggstrom show a MSC connected to the BSC and the BSC connected to the SGSN, without an explicit connection between the SGSN and the MSC. However, the connections shown in Haeggstrom are nowhere indicated as being exclusive, and Applicant submits that a direct connection between the MSC and the SGSN is not shown in Haeggstrom merely because such a connection is essentially irrelevant to the Haeggstrom invention. Further, Applicant notes that Haeggstrom indicates that a conventional GSM/GPRS system is used, and one of ordinary skill in the art understands that the SGSN is connected to the MSC in a conventional GSM/GPRS system, without intervention of a BSC.

In view of the above, Applicant submits that combining Haeggstrom with Aarino, assuming *arguendo* that such combination is proper, does not result in an arrangement that can implement the subject matter claimed in independent claim 1. Haeggstrom's HLR and VLR are not "location servers" as that term is understood by one of ordinary skill in the art. And, even treating them as "location servers" does not transform the combination into the claimed subject matter because 1) the Haeggstrom HLR/VLR never transmit any location service messages that flow to the mobile terminals as required by claim 1; and 2) Aarino already has the GPRS network connected to the Internet not through the PSTN, which, with the addition of TE equipment connected to the Internet, is all that is required to implement the "improved speech quality" teachings of Haeggstrom. Thus, the combination of Aarino and Haeggstrom fails to show each

and every element of claim 1. Accordingly, Applicant submits that independent claim 1, and its dependent claims 2-4, define patentable subject matter over the cited art.

### **Claims 5-8**

Independent claim 5 requires: 1) "transmitting said location service message from said mobile station to said serving GPRS support node"; 2) "forwarding said location service message from said GPRS support node to a base station subsystem supporting said mobile station"; and 3) "forwarding said location service message from said base station subsystem to said location server." In simple terms, claim 5 is similar to claim 1 discussed above, but claim 5 is directed to the uplink communications (up from mobile station), while claim 1 is directed to the downlink communications (down to mobile station). Thus, for reasons similar to those expressed above with respect to claim 1, Applicant submits that independent claim 5, and its dependent claims 6-8, define patentable subject matter over the cited art.

### **Claims 9-12**

Independent claim 9 requires "said support node receiving downlink location service messages from said base station subsystem and forwarding said downlink location service messages to said mobile station, said support node further receiving uplink location service messages from said mobile station and forwarding said uplink location service messages to said base station subsystem" (emphasis added). For reasons similar to those expressed above with respect to claim 1, Applicant submits Aarnio modified according to Haeggstrom fails to teach or suggest each claimed

limitation of claim 9. Accordingly, Applicant submits that independent claim 9, and its dependent claims 10-12, define patentable subject matter over the cited art.

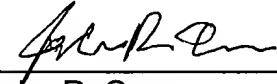
### **Claims 13-16**

Independent claim 13 requires: 1) "transmitting said location service message from said location server to a base station subsystem"; 2) "forwarding said location service message from said base station subsystem to a serving GPRS support node"; and 3) "forwarding said location service message from said serving GPRS support node to said LMU." As pointed out above with respect to claim 1, the modification of Aarnio according to Haeggstrom, as suggested by the Examiner, fails to show this claimed process. Accordingly, Applicant submits that independent claim 13, and its dependent claims 14-16, define patentable subject matter over the cited art.

### **Claims 17-20**

Independent claim 17 requires: 1) "transmitting said location service message from said LMU to said serving GPRS support node"; 2) "forwarding said location service message from said GPRS support node to a base station subsystem supporting said LMU"; and 3) "forwarding said location service message from said base station subsystem to said location server." As pointed out above with respect to claim 5, the modification of Aarnio according to Haeggstrom, as suggested by the Examiner, fails to show this claimed process. Accordingly, Applicant submits that independent claim 17, and its dependent claims 18-20, define patentable subject matter over the cited art.

Respectfully submitted,  
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